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THE JOURNAL OF PHILOSOPHY PSYCHOLOGY AND SCIENTIFIC METHODS

INSTRUMENTAL TRANSFORMISM AND THE UNREALITIES OF REALISM

THE instrumentalists in philosophy are reaping a rich harvest of criticism and contempt because of the wild oats they have sown. But as true votaries of a genuine empiricism they do not deny the excesses of their youth. Not by way of excusing their excesses, but by way of explaining them, do the pragmatists describe the original state of their rebellion from the traditions of philosophy. It was because pragmatism arose as a criticism of the closed system of absolute idealism that James rejected logic, fairly, squarely and irrevocably.¹ And because the pragmatist could not tolerate the implication that the value of thought was to be judged by an external correspondence of ideas to "Reality," he laid himself open to the charge that truth is what gives satisfaction.² In spite of the fact that besides the criterion of the satisfaction of practical needs, James also insisted upon the agreement of thought with actual objects, and in spite of the fact that the instrumentalist disclaims all responsibility for the former criterion,³ it is precisely that one which is still held up to instrumentalism as its cardinal error. We observe then that not because instrumentalism is really responsible for the sins imputed to it, is it willing to trace its growth from a precarious position, but because it hopes thereby to contribute to the clarification of thought.

The outstanding criticisms of the instrumental attitude made by both the idealists and new realists may be summed up in two coordinate propositions. The first asserts that the instrumentalist has no logic, because he is interested merely in the satisfaction of practical needs. The second point in the indictment is that instrumentalism leaves no place for solidity; its world is entirely elusive and arbitrary. Since the issue seems so definite, this paper proposes to review some of the salient features of instrumental logic by way of clearing up some points of agreement and disagreement between the instru-

¹ *A Pluralistic Universe*, Lecture V., p. 212.

² James: *Pragmatism*. Lectures II. and VI.; cf. Dewey, *Essays in Experimental Logic*, pp. 320 ff.

³ Dewey: *op. cit.*, p. 331.

mentalist and his critics. The way to this task is indicated by the fact that for the instrumentalist as for the realist, logic is the essence of philosophy.

Instrumentalism considers its most positive achievement to be the capacity to bring order and system into a world of shifting occurrences. It is the necessity to relate things which makes a logic necessary at all, and in the fact that instrumental logic is able to do this lies its fundamental significance. Instrumental logic is not a self-subsisting activity indulged in for its own sake; rather, it is purposive and makes for some factual reconstruction indicated by the emergence of some actual problem. Its function is to carry us over from one event to another, making our world meaningful and our actions with respect to it possible and worth while. The essence of logic is to give meaning to objects and events by way of evaluating them, and this means to connect them with our previous and present experience. This kind of logic gives thought its wings, not the logic of absolute relations.⁵ And to borrow an excellent description from Russell, instrumental logic "brings with it—as a new and powerful method of investigation always does—a sense of power and a hope of progress more reliable and better grounded than any that rests on hasty and fallacious generalizations as to the nature of the universe at large."⁶

The process of giving meaning to objects and their relations is the work of the categorization function in the course of scientific analysis and synthetic generalization. These last-mentioned processes refer to the way in which we start with a specific happening, say the explosion of a chemical substance which for the present confuses our world of reality, and end with a solution of our defined problem and the consequent enlargement of reality. It is at this point that the instrumentalist unblushingly asserts that he constantly creates⁷ his world anew.⁸ And this is because for him the world is a denotative term for men, metals, electricity, steam, and all other things, forces and processes with which he actually deals. It is not absurd to expect the public to believe that man can transform his world in order to further his activity, since everybody can see it done. To deny the possibility of this is to deny the function and

⁴ Cf. Russell: *Scientific Method in Philosophy*, pp. 33, 239 and elsewhere.

⁵ Cf. Russell: *op. cit.*, p. 59.

⁶ *Ibid.*, p. 30. Cf. Dewey's criticism of Russell's problem of the "world," *Essays in Experimental Logic*, Chap. XI.

⁷ Note that this creation is always a transformation of crude facts into every-day knowledge, and scientific facts and laws. The problem of the universe at large as formulated by the idealist and realist is never involved.

⁸ Cf. Caldwell: *Pragmatism and Idealism*, p. 135.

progress of science and knowledge. We may place our finger upon the nerve of the absolutist's criticism of instrumentalism by indicating that the critic never is talking about the instrumentalist's world. The pragmatic attitude is to disclaim all commerce with, and knowledge of the eternal worlds of the idealist and the realist, and the instrumentalist is entirely willing to forego all powers with respect to them.⁹

The question arises as to whether the instrumentalist's insistence that he is constantly retransforming his world means that he makes it an arbitrary construction. Such a question is impossible when we remember that the values or determinations which the scientist gives to the objects with which he deals, are tools forged in the course of actual contact with things, and are designed to increase the possibilities of such contacts. The categories of instrumentalism enlarge and further experience by discovery of larger implications of facts. It is not at all to the point to argue that, after all, nothing is created and that we must look upon the new objects of science as having always existed. The instrumentalist insists that the world was very considerably remade when Faraday discovered that "static electric charges and forces were dependent upon the characteristics of the material substance in which electrified bodies were immersed," and still further remade when Hertz showed experimentally that electro-magnetic energy passed through vacuous space, and that this radiant energy was undoubtedly of the same type as light and heat.¹⁰ We must be sure of our ground at this point, and insist that it is precisely because the instrumentalist is thinking in terms of human actions and the possibility of increasing those actions and capacities for action, that his recategorization of the world at the point of specific problems means a transformation by creative discovery of that world.¹¹

Besides the criticism with which we have just dealt, namely the conception that the work of science is not a transformation of the "real" world, there is another type of criticism which claims to be more scientific, and takes the form that while these transformations are possible and do occur, they do so because they answer to a set of absolute laws. These thinkers start from scientific premises; that is, the new realists mean to discuss logic as operating in a domain of scientific fact, although they soon get far away from that position. To insist that our knowledge is such as it is, because there are absolute laws and relations, if not logical atoms, eternally existing in the

⁹ Cf. Russell: *op. cit.*, p. 17.

¹⁰ More: *The Limitations of Science*, p. 160.

¹¹ Cf. Mead: *Creative Intelligence*, p. 225.

world, is entirely a non-scientific attitude, since the work of science is precisely to determine just what laws, relations and things exist. The realist suggests that he really means that if we hold up as an ideal the existence of such absolute laws we won't blame nature for our mistakes but only ourselves.¹² In this statement lies the fallacy of thinking that the work of evaluating objects and relations is a trivial occupation, and that we need only have a worthless promise to keep us at our task. This viewpoint entirely overlooks the fact that our task of evaluation is a process of making our difficult way with unrelenting facts, which are constantly presenting us with newer and more complex problems. The realist forgets that it is the instrumentalist who is developing a logic of things, and moreover a logic of genuine things.¹³ For this reason the instrumentalist has no problem as to why he succeeds;¹⁴ he succeeds because he sets himself no false problems, but works zealously at those nature sets him, and every one interested in nature knows that such an occupation leaves no time to pursue supernatural mysteries. And by the same token the logic of absolute relations must always be seeking and never finding, because it starts with the presupposition that real things are metaphysical.¹⁵ It is not a perversion of the realistic logic to make it end with logical atoms as Costello asserts;¹⁶ that is the way it must end, unless one does what Costello would do, namely, forget the atoms and leave their systems of relations.¹⁷ And when Costello does this the question arises as to whether he accomplishes more than he asserts the idealistic logicians do, namely revive the Greek concept of perfection. The idealist might reply that Costello does not do so much, namely that his system is just as arbitrary but not so perfect. Costello maintains his pious hope concerning the final outcome of the "truly relational" logic because he thinks it is not what he calls one of the old logics with a new face.¹⁸

The new realists condemn all those who can not believe that there are reals in experience, that there are in science eternal and immutable laws. "The laws of space, number and of matter and energy have not changed from the times of Euclid and Pythagoras and Archimedes; the laws of gasoline engines were just the same in the days of the ancient Athenians as now. We know them and they did

¹² Cf. Costello: *Studies in the History of Ideas*, Columbia University, 1918, p. 257.

¹³ Cf. Costello: *ibid.*, p. 267.

¹⁴ *Ibid.*

¹⁵ *Ibid.*, p. 257.

¹⁶ *Ibid.*, p. 261.

¹⁷ *Ibid.*, p. 262.

¹⁸ It has become a favorite form of self-delusion with the new realists to think that they have little or nothing in common with Aristotle.

not."¹⁹ And Montague might have added that these laws were just the same thousands and thousands of centuries before Athens. In attempting to find some meaning in this statement we might begin by asking whether the new realist means to say that he believes uncritically there must be changeless laws of space and number and so on throughout the whole range of science. The question is suggested by the fact that Montague mentions Euclid in connection with the laws of space, and of course Montague would hardly care to say that the Euclidean law is an immutable law of space.²⁰ He probably would be just as unwilling to say that Lobatchewsky's law is an absolute law of space, and if so the result is that Montague stands for absolute laws which merely "are," but which nobody knows and which have nothing to do with science. But no, Montague says we know these absolute laws, while only the Athenians did not. There are two questions raised here; the first is why doesn't Montague state what these absolute laws are; LeRoy, Mach, Duhem, Poincaré and others were forced to confess their inability to find them. The second question is what right has Montague to declare that in the two thousand years ahead of us there won't be such progress made in the discovery of absolute laws as in the two thousand years past.

But let us not hold Montague too rigidly to his statement. He might with excellent ground argue against the extreme contingentists who seem to deny any stability in science. Montague might then mean that we do not know any absolute laws but that unless there were such laws, events would not occur as they do. In other words Montague might mean that there must be laws, in the sense that the idealist thinks there must be a world, behind phenomena. Professor Dewey has convincingly discussed this situation.²¹ He refers to the case of a man who has been rescued from drowning under peculiarly precarious circumstances. A bystander remarks that now he is a saved man. "Yes," replies someone, "but he was a saved man all the time, and the process of rescuing, while it gives evidence of the fact, does not constitute it." Dewey is discussing the problem of the truth of ideas, but the illustration has point here. The realist seems to believe that whatever happens, happens because of immutable laws, and not that because things happen thus and thus we can frame by induction various laws; and thus he differs from the instrumentalist who considers that were it not for pulling the man out of the water, there would have been no saved man. The ultimate laws of

¹⁹ Montague: *Studies in the History of Ideas*, p. 236.

²⁰ Note that he has just said the Athenians did not know these absolute laws, but I mean to suggest that there might be good reasons for not taking the Euclidean law as the absolute one.

²¹ *Influence of Darwin on Philosophy and other Essays*, p. 143.

science as the instrumentalist reinterprets the new realistic standpoint, are nothing more than evaluations of phenomena, their behavior and relations, which are formulated in handling these phenomena in actual scientific pursuits; and from the pragmatic standpoint these ultimate laws are nothing less than the means by which the world of things becomes intelligible to us and amenable to our reconstructions of it.

The instrumentalist is entirely in sympathy with the new realist in asserting the existence of definite laws of science. The former is keenly aware of the brute stubbornness of facts, and the lack of arbitrariness in things, but this does not drive him to believe in unknown and unknowable laws, which always imply a metaphysics which can mean nothing and accomplish nothing. The instrumentalist, working always with concrete problems, looks upon the laws of science as broad and general evaluations derived from a long experience with actual things. Since the entire procedure of knowledge is to understand and control phenomena, it is obvious that man can not create the crude facts with which he is dealing. It is these crude facts which are given. All the crude facts of disease, the organization and decomposition of matter, the changes in geological structure and on through all the myriads of happenings among which the scientist works, are not made by him. They do not depend upon him for their crude existence or their crude laws. Even if we overlook the work of Wolff, Mirbel, Von Baer and others, we must say that the crude facts of cellular biology were given to and not made by Schwann and Schleiden; but is it possible to overlook the difference between biological reality before and after their work? Similarly, Newton did not create the crude facts of gravitation, nor Darwin those of transformation of species, but if these men are taken as examples of scientists their accomplishment in transforming the world is unequivocal. We are immediately brought face to face with the problem of the relation of science to its crude facts. In a general way this is the problem of the relation of things known to things. All science and philosophy deal with observable things and relations. Perhaps one of the first facts about things is that we observe them differently. Our contact with things depends upon our previous observations and these differ with each person. In order to generalize them for our scientific purposes we must adopt standards of reference. These latter become laws of things known and are independent of the individuals whose observations go to make these laws.

Our laws of mechanics whose sole validity and value lie in their character as genuine evaluations of our crude every-day facts, do not of course precisely represent any specific event. It is because these

laws are made for the guidance and enlargement of action that they are made universal, in the sense that they answer to all, though not precisely to any specific fact. Thus, to borrow some examples from Aliotta, "according to the laws of pure mechanics, a pendulum should continue its isochronous oscillations to all eternity, whereas it stops after a certain time; a projectile thrown in a straight line should pursue the same direction with a uniform motion *ad infinitum*, whereas in reality we see it fall after having described a parabola."²² These laws are rigid and independent in so far as our evaluations of things are rigidly determined with reference to the actual things from which they are abstracts and interpretations. This condition accounts for the difference in absoluteness of scientific laws. The fact is that all laws, being after all laws of things observed, are subject to modification, and revision.²³ These modifications are the natural consequences of meeting with new phenomena in the ordinary course of human life. The conflicts of science are occasioned by the discovery of an exception to a law which was formulated on the basis of certain observed facts. In such cases the laws are expanded to include the new phenomena. It is because the new realist fails to appreciate the true nature of a scientific law that he assumes that there are conflicts between immutable laws and perceptual facts, or between reason and sense. To quote Montague as an example, we find that what he considers a conflict between a law and a perceptual fact, is the type of puzzle which Zeno first formulated.²⁴

The instrumentalist is far from denying the independence of reality, but when this independence signifies anything he considers it a limiting conception, in the same sense that the law of conservation of matter or energy is a limiting conception. It is a formulation of related events which makes for freedom and variety of action and knowledge. There is nothing arbitrary or artificial about these laws, since the scientist is dealing with actual things, well named by Poincaré crude facts; these crude facts stimulate the scientist to evaluate them as scientific facts, and to formulate them into scientific laws. Of course Poincaré is seriously at fault in thinking that all the scientist does is to create the language in which he enunciates facts.²⁵ The evaluations of the scientist consist of a working over of the specific crude facts by comparison and testing into a scientific fact,

²² *The Idealistic Reaction against Science*, p. 338.

²³ It is because Russell considers the laws of science as entirely without relation to actual empirical happenings, that he thinks these laws absolute. *Cf. Principles of Mathematics*, p. 493.

²⁴ *Cf. Studies in the History of Ideas*, pp. 228 ff.

²⁵ *The Foundations of Science*, p. 332.

which makes for an enlargement of the domain of science into which the crude fact forced its entry. The crude facts are not lost, but integrated, and this is the reason that the scientific manipulation transforms genuine reality. The complete world of science, if it is genuine and critical, would constitute the entire world of things and relations. The facts of science must be looked upon as the crude facts of naïve experience standardized, criticized, and interpreted.

The range of categories for the instrumentalist would therefore cover all phases of phenomena, whether the crude facts of our everyday life or the most abstract determinations of science and philosophy. The point is that every category represents in its final analysis some kind of contact of a human being with objects or events. In the lowest stages of this interpretation procedure the categories merely stand for the particular contact, while in science and philosophy the categories represent the most intimate significance of these contacts. In the latter cases it is not important merely to know that the contacts have occurred, but to understand them and to increase their possibilities.

The instrumentalist looks upon the categories time, space, motion, causality and force as values abstracted from actual empirical phenomena for the purpose of controlling them. Causality is a category which aids us in the work of organizing successive facts in a world of rapidly shifting experiences. It enables us to relate in specific ways older and newer experiences, thus giving a serviceable continuity to the world of changing things. The category of substance, for example, is a scientific evaluation designed to reach back to certain specific qualities or conditions of things. The instrumental character of the categories lies in the fact that, although not themselves concrete things, they enable us to deal with those things. Depending upon the functional value of the categories for specific scientific purposes, substance, for example, may be further characterized as matter, energy or electricity, and as Brown²⁶ has pointed out it happens to be most useful in science to-day to make no separation between the categories of matter and energy.

We must point out again that in all cases in which the categories are of actual service in the control of certain phenomena, they are derived from those phenomena. Thus, Euclidean space is the space of science because it is built up through actual contact with things, and consequently is the most serviceable in the description and control of such things. When data will accumulate which can not be handled by Euclidean space, then a multidimensional space will have to be employed. It is only in so far as mathematical physics is not

²⁶ This JOURNAL, XIV., p. 64.

employed with the immediate control of phenomena that it may posit a multidimensional space, and reduce matter or substance to quantity. The main point here is that the abstract concepts of science are developed in an attempt to control the fallings and breakings, the movings and restings of actual things, now, a while ago, and in the hours to come. Since these objects and events are real, the evaluations which are continuations and elaborations of them must also be real. The instrumentalists are the last persons on earth to be called nihilists or nominalists, since the former start and end with the only sort of reality there is. The instrumentalists have thus in common with the fictionist²⁷ and the contingentist²⁸ the idea that science and its categories are instruments in the service of man. But unlike the fictionist the instrumentalist derives his categories from actual events and tests them by those events; consequently these categories are realities, and this characteristic applies to all evaluations, whether of the physical, biological or social sciences. The instrumentalist differs from the contingentist in that the categories for the former are merely realities for action. The instrumentalist recognizes no other reality than the world of naïve phenomena, whether described as the durational immediacy of the intuitionist, known through philosophical categories, or as an extremely mediate reality of the Neo-Kantians, which is never known at all. And so while the instrumentalist is a realist, he differs widely from the new or presentative realists, since we have already observed that their reality comes to be a series of unknown entities far removed from actual things.

Our study thus far has indicated that the categories or determinations of experience must represent a graded series which reach down below the level of cognition. The categories in our perceptual experiences are not knowledge elements in any genuine sense. Our primary categories are reactions or modes of response to objects. What things mean is merely the way we react to them. During the course of our experience with these things we find that with the capacity to control our responses there is correlated the process of lifting meanings out of the field of actual happening; that is, things are pointed out, intended and known. The primary function of scientific concepts or categories is to give us a means of control over our experiences. It is extremely essential therefore that these categories should have the broadest identity with and reference to original happenings.

The question arises as to what the specific function of the philosophical categories are, and it is the lack of explicit statement con-

²⁷ Vaihinger.

²⁸ LeRoy, Mach, Bergson, *etc.*

cerning them which is one of the instrumentalist's most flagrant sins of omission.²⁹ The categories of philosophy are of course continuous with the categories of science and of every-day life. It is not at all a sign of the bankruptcy of philosophy³⁰ that it uses the same categories as science; it is rather a sign of progress and expansion, an indication that philosophy is accomplishing something, and signifying something. The idealist who seeks entirely other categories for philosophy, seeks, though he hesitates to say so, something that will carry him out of the actual world into a realm beyond. As a result the idealist criticizes the instrumentalist for thinking in terms of organism and environment, because the former mistakenly thinks that to remain in this concrete world of ours excludes him from a genuine spiritual life. It seems clear that the spiritual life the idealist wants has nothing to do with life, and that accounts for his inability to think of himself as a biological organism. What the idealist means when he opposes the instrumental movement is that it does not "express reality in its completeness."³¹ And when he speaks of philosophical adventure³² and freedom of reason³³ he is speaking of a "yearning soul which first expresses itself in loyalty to society and in good citizenship, but which can find no final satisfaction until it completes itself in the knowledge and thought of God, in union with whom alone the individual comes to be that which he really is."³⁴

The instrumentalist must look upon philosophy as theoretical science; its material is precisely that of science, but its attitude is broader. Science has two closely related phases of activity that are still distinct. In the first place it is interested in the solution of immediate practical problems. In conformity with this interest it evaluates things precisely for the purposes at hand, without regard to their larger implications. The theoretical phase of science which makes for a larger control and understanding of phenomena is more critical in its determinations. Thus in order to solve some specific bio-chemical problem, for example, we make an absolutely mechanical determination of phenomena, while when we are interested in enlarging the scope of our researches we may very well question whether the phenomena of biology are entirely mechanical. For

²⁹ Here again there has not been an entire neglect of the matter, but because instrumentalism has faced the necessity of overcoming the inertia of absolutism, it has exposed itself to the charge of being anti-philosophical. Cf. Dewey: *The Subject Matter of Metaphysical Inquiry*, this JOURNAL, XII., p. 337.

³⁰ Howard, this JOURNAL, XV., p. 154.

³¹ Bosanquet: *Realism and Metaphysics*, *Philos. Rev.*, XXVI., p. 8, quoted by Howard.

³² Howard: *loc. cit.*, p. 156.

³³ *Ibid.*, p. 157.

³⁴ Bosanquet: *The Principles of Individuality and Value*, p. 403.

some purposes we may think that things are absolutely static and without possibility of variation, while for others we may not make any such assumption. In a general way we think of the theoretical phases of science as checks on the practical pursuits; so the possibilities of changing our technique of investigation are not precluded by a prejudice of the case. The theoretical or philosophical determinations then, are in a way relatively ultimate, complete and final; that is, they remain unchanged, pending the discovery of new facts.³⁵

This domain of theoretical science is a genuine speculative realm, in which the motive of practical accomplishment plays only such a part as to allow us to say that the phenomena involved are continuous with those of the specific sciences. In following out the function of the categories as the instrumentalist uses them, we find that the philosophical categories break across the boundaries of the specific sciences such as physical, biological and psychological, and determine phenomena on the basis of the factual contribution of all of these. Within the domain of the special sciences and various phases of practical life the use of categories peculiar to each domain must be rigidly adhered to. We can not fail to recognize the striking incongruity of using teleological categories as evaluations in the field of mechanics.

An important implication throughout the discussion of the instrumentalist's doctrine of categories is the significant place which consistency and correspondence play in the use of them. In the first place because the pragmatic attitude is an evaluation of actual things the evaluation must correspond to the concrete things evaluated. This is not of course a correspondence between mutually exclusive elements, but in the practical manipulation of science the categories stand over against actual things.³⁶ In the second place, since the values are primarily instruments for the enlargement of our contacts with the world of things, there must be a consistency in our attitudes. If our interest is merely to control a specific phenomenon, it is only necessary that the particular categories referring to it must hold together. We may thus have an indefinite number of categorization systems. But if our interest is theoretical, and we wish, for example, to test our evaluation of the substance of things, as energy or electricity, then there must not be within this domain any contradictions. On the one hand, since we are not interested in any absolute world presupposed prior to experience,³⁷ we may very well

³⁵ The practical solutions of science as compared with the theoretical are fleeting and tentative.

³⁶ We have indicated above that a scientific category does not refer to any particular thing.

³⁷ What Dewey calls creational and eschatological interests, this JOURNAL, XII., p. 354.

consider our evaluation systems as mutually incompatible. And because we may not in all our activities of evaluation be interested in specific problems, but in the continuity and significance of our general knowledge of things we must have our categories carry over from one realm of science to another, and thus cohere in a functional totality.

It is an entire misrepresentation to say the instrumentalist abhors systems.³⁸ What he does abhor are absolute systems which have no relevancy or significance and nothing to recommend them but their systematization. The realist clearly criticizes the instrumentalist for not building systems, merely for the sake of building³⁹ them, in spite of the latter's constant reiteration that his systems must serve some function. The instrumentalist is constantly campaigning; his whole method is that of overcoming the autocracy and arrogance of the brute facts of experience, but he can never merely campaign, just for the sake of campaigning. He has discovered by hard experience that to approach scientific problems with empty abstractions and ready-made systems is like equipping an army to-day with blunderbusses and brass cannon. Each problem is unique and the instruments to solve it must arise out of the situation at hand. To believe otherwise is to believe in a set of eternal and unchangeable conditions which must forever lie beyond the pale of verifiable science.

To summarize, the instrumental movement represents one of the specific types of reaction to absolutism, which is slowly but persistently being forced out of philosophy. Among other reactions to absolutism, that known as new realism is characterized by the fact that it merely shifts the ground of the absolutism, and instead of conceiving reality as being behind experience, puts it into experience as absolute entities, relations or immutable laws. As over against this presentative realistic position, instrumentalism denies all absolutes, whether essences, relations or laws. It considers the work of science and philosophy not to be that of finding reals in experience, but assumes that our actual world of concrete things and events is real, and that there is nothing beyond or behind them. Thus the facts and laws derived from this domain of reality are reals, but still subject to the transforming influence of the creative evaluation of science. To assert the existence of any absolute thing or relation is to fly in the face of all scientific facts. This last proposition includes all absolutes, and so the instrumentalist refutes the idea of Mach and his disciples, that reality is reducible to mental states,⁴⁰ by pointing

³⁸ Cf. Costello: this JOURNAL, XV., pp. 60 ff.

³⁹ *Ibid.*, p. 68.

⁴⁰ *Science of Mechanics*, 1917, p. 482. *Analysis of the Sensations*, Introductory remarks, and elsewhere.

out that these sensations are themselves abstractions from things and can not therefore be their underlying reality. Sensations are categories referring to certain specific qualities of things during the course of their interpretation. It is clear that the instrumentalist is a frank and consistent, naive or common sense realist, and takes as his ultimates the crude facts of every-day experience. He takes to be real only that which can be observed, tested, and made to yield conviction by proving genuine in the course of experimentation.

And thus because the instrumentalist is not an idealistic creator nor possessed of a transcendental reason capable of grasping absolute reality in the new realistic manner, he does not set over against his philosophical method an impossible task. And finally, since instrumental logic is the method of science it is submitted to thinkers upon its merits. What is claimed for it is that it will increase man's capacity to understand and control phenomena, that is, real things. In support of this claim we may point out that the critics of instrumentalism have never really disputed it, but have attacked the pragmatic attitude because it can not yield absolute reality. Our study has indicated that absolute reality is an unsound fabrication. Is it fair then, to condemn the instrumental method because it can not find phantoms that it does not seek?

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SOCIETIES

THE NINETEENTH ANNUAL MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

THE Western Philosophical Association held its nineteenth annual meeting at the State University of Iowa, Iowa City, on April 18 and 19, 1919. The programme covered a fairly wide range of topics, though the major emphases fell on political philosophy and on the present obligations and opportunities of philosophy in the fields of educational and, more generally, of social reconstruction. While there were few instances of what might properly be called a clash of opinion, there were many delightful differences as to the manner in which subjects were approached and viewed. This was strikingly true of the symposium on "The Function of Philosophy in Social Reconstruction." The subject was in this instance illumined from the standpoints of the history of philosophy and of culture, of ethical reflection, of psychological description and analysis, and of metaphysics. In all, twelve institutions were repre-